

Syuuji MATSUURA
Serial No. 09/975,997
Response to office action dated March 31, 2004

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in this application.

Listing of Claims:

Claim 1 (Currently Amended): A digital signal receiving tuner receiving digital signals of a plurality of frequency bands, comprising:
an input circuit receiving said signals of a plurality of frequency bands;
an input selector circuit receiving the signals from said input circuit to divide the received signals into a plurality of groups according to the frequency bands and selecting and outputting the received signals;
a radio-frequency amplification input filter circuit supplied with a band-switching voltage for extracting a received signal of a corresponding frequency band from the received signals supplied from said input selector circuit;
a radio-frequency amplifier circuit for amplifying the received signal supplied from said radio-frequency amplification input filter circuit;
a radio-frequency amplification output filter circuit supplied with the band-switching voltage for selectively outputting a radio-frequency signal of a predetermined band among radio-frequency signals supplied from said radio-frequency amplifier circuit;
an oscillator circuit having a phase-locked loop for supplying said band-switching voltage and outputting a local oscillation signal for each frequency band; and
a mixer circuit mixing the radio-frequency signal selected by said radio-frequency amplification output filter circuit and the local oscillation signal from said oscillator circuit to output an intermediate-frequency signal,
wherein said oscillator circuit includes
a voltage-controlled oscillator provided correspondingly to each frequency band for
outputting a corresponding local oscillation signal, and

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a phase-locked loop circuit constituting the phase-locked loop together with each voltage-controlled oscillator, and

wherein said phase-locked loop circuit includes a loop filter formed of a strontium ceramic capacitor.

Claim 2 (Original): The digital signal receiving tuner according to claim 1, wherein said radio-frequency amplification input filter circuit and said radio-frequency amplification output filter circuit include a bandpass filter.

Claim 3 (Original): The digital signal receiving tuner according to claim 1, wherein said radio-frequency amplification input filter circuit includes a bandpass filter and said radio-frequency amplification output filter circuit includes a low-pass filter.

Claim 4 and 5 (Canceled).

Claim 6 (New): A tuner for receiving digital signals, comprising:
an input circuit receiving the signals;
input selector circuitry supplied with signals from the input circuit for dividing signals from the input circuit into a plurality of frequency bands;
radio-frequency amplification input filter circuits respectively provided for each of the frequency bands, each radio frequency amplification filter circuit being supplied with a band-switching voltage and filtering the signals supplied thereto from the input selector circuitry;
radio-frequency amplifier circuits respectively provided for each of the frequency bands, each radio-frequency amplifier circuit amplifying signals supplied thereto from a corresponding one of the radio-frequency amplification input filter circuits;
radio-frequency amplification output filter circuits respectively provided for each of the frequency bands, each radio-frequency amplifier circuit supplied with the band-switching voltage and filtering the signals supplied thereto from a corresponding one of the radio-frequency amplifier circuits;

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oscillator circuitry comprising a phase-locked loop for supplying the band-switching voltage and outputting local oscillation signals for each of the frequency bands; and mixer circuits respectively provided for each of the frequency bands, each of the mixer circuits mixing signals supplied thereto from a corresponding one of the radio-frequency amplification output filter circuits and one of the local oscillation signals to output an intermediate-frequency signal,

wherein the oscillator circuitry includes

voltage-controlled oscillators respectively provided for each of the frequency bands, each voltage-controlled oscillator outputting the local oscillation signal for a corresponding one of the frequency bands, and

a phase-locked loop circuit which together with the voltage-controlled oscillators comprise the phase-locked loop, and

wherein the phase-locked loop circuit includes a loop filter comprising at least one strontium ceramic capacitor.

Claim 7 (New): The tuner according to claim 6, wherein the received signals comprise television signals.

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Amendment to the Title:

Please change the title of the application to REDUCED NOISE DIGITAL TUNER.